

REMARKS

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested.

Claims 1-16 and 18-31 are presently active in this case, Claims 1, 16, and 18-29 having been amended, Claim 17 having been canceled without prejudice or disclaimer, and Claim 31 having been added by way of the present Amendment.

No new matter has been submitted herein. Claims 1 and 16 have been reworded to ensure that a layer of sealant is positively recited therein. Claim 16 has also been amended to incorporate the subject matter of Claim 17. Support for new Claim 31 can be found in the non-limiting embodiments depicted in the figures of the present application. (See, e.g., tapering portion 4.)

The Applicants respectfully request entry of the amendments set forth herein as they are believed to place the application into condition for allowance, or place the application into better condition for appeal. As mentioned above, Claims 1 and 16 have merely been reworded to ensure that a layer of sealant is positively recited therein based upon indications in the outstanding Official Action that the Examiner did not believe that such features were previously, positively recited in the claims. Claim 16 has also been amended to incorporate the subject matter of Claim 17. Such amendments are not believed to raise new issues on the merits, but rather clarify the issues.

In the outstanding Official Action, Claims 1-3, 11, 12, 14, and 15 were rejected under 35 U.S.C. 102(b) as being anticipated by King, Jr. (U.S. Patent No. 3,371,572). Claim 16 was rejected under 35 U.S.C. 102(b) as being anticipated by Reynolds (U.S. Patent No. 3,464,472), Huck (GB 913,759), and Mosc (SU 1567-808A). Claims 1-5, 7-21, and 23-30 were rejected under 35 U.S.C. 103(a) as being unpatentable over King, Jr. in view of Ardell (U.S. Patent No. 3,139,786). Claims 6 and 22 were rejected under 35 U.S.C. 103(a) as being unpatentable over King, Jr. in view of Ardell and further in view of Neuschitz (U.S. Patent No. 3,279,519) and Rath (U.S. Patent No. 4,806,054). For the reasons discussed below, the Applicants request the withdrawal of the art rejections.

Claim 1 of the present application recites a lockbolt comprising a bolt shaft having a locking portion including a plurality of grooves around a surface of the bolt shaft and including a plurality of peaks at least some having a parallelogram shape and being disposed between the grooves. The lockbolt also comprises a bolt head on a first end of the bolt shaft and a layer of sealant retained on the locking portion. The locking portion is configured to squeeze-out excess sealant to form the layer of sealant on the surface. The Applicants submit that the King, Jr. reference either alone or in combination with the Ardell reference fails to disclose or suggest all of the features recited in Claim 1 of the present application.

The Official Action indicates that it is implied to one of ordinary skill in the art that the King, Jr. reference anticipates the retention of at least some sealant between the locking bolt and swaged collar because the invention is particularly concerned with knurl means for releasing sealant around the locking bolt. The Official Action places emphasis on the word

“around” when discussing the flow of sealant. The Applicants respectfully submit that the emphasis should instead be placed on the word “releasing,” since the King, Jr. reference is concerned with the removal of the sealant from around the entire circumference of the bolt in order to prevent any remaining sealant that might prevent proper locking of the collar on the bolt. (See column 2, lines 28-30.) The Official Action makes reference to the language in Claim 8 of the King, Jr. reference which refers to the “egress” of sealant from around the bolt. Again, the Applicants note that this terminology teaches the removal of all of the sealant from around the entire circumference of the bolt in order to achieve the goal of the King, Jr. reference, namely to prevent any remaining sealant that might prevent proper locking of the collar on the bolt. The word “egress” is defined in Webster’s II, New College Dictionary as “the act of going out” and “an opening or means of going out: exit.” Thus, this terminology does not suggest that the sealant is flowing around the bolt and being left on the surface of the bolt, but rather is exiting the area around the bolt and being removed from the surface thereof.

Accordingly, the Applicants respectfully submit that the King, Jr. reference does not teach or even suggest a layer of sealant as expressly recited in Claim 1 of the present application.

The Official Action suggests on pages 4 and 5, that the layer of sealant was not previously positively recited in Claim 1. Accordingly, the Applicants have reworded Claim 1 to ensure that a layer of sealant is positively recited therein. Accordingly, the Applicants respectfully submit that this structural limitation should be given patentable weight.

Furthermore, the Applicants respectfully submit that the Ardell reference fails to supplement the deficiencies in the teachings of the King, Jr. reference described above. The Ardell reference describes the wiping of sealant from the shank grooves in an obvious attempt to completely remove all the sealant therefrom in order to prevent hydrostatic pressure from the sealant preventing the collar from being properly swaged into the grooves. (See column 1, lines 13-36.) The Ardell reference describes an invention that removes the sealant without the need for such wiping; however, the intended result is the same, namely the complete removal of the sealant from between the collar and the grooves. The sealant (8) described in the Ardell reference is intended to be positioned between fayed members (6 and 7), and not on any portion of the shank (1). Thus, the Ardell reference also fails to teach or even suggest a layer of sealant as expressly recited in Claim 1 of the present application.

Accordingly, the Applicants respectfully request the withdrawal of the obviousness rejection of Claim 1 and the claims that depend from Claim 1, which is predicated upon the teachings of the King, Jr. reference and the Ardell reference.

Claim 16 of the present application advantageously recites a lockbolt system comprising a bolt shaft, a bolt head on a first end of the bolt shaft, a locking collar, and a surface sealant layer on the bolt shaft. The bolt shaft has means for engaging the locking collar with the bolt shaft such that the locking collar is securely deformed in a locking manner thereby forcing a sealant to distribute and form the surface sealant layer on the bolt shaft, and squeezing-out excess sealant. The surface sealant layer forms an adhesive bond

between the bolt shaft and the locking collar. The means for engaging includes a plurality of grooves around a surface of the bolt shaft and includes a plurality of peaks at least some having a parallelogram shape and being disposed between the grooves.

The Applicants submit that the King, Jr. reference in combination with the Ardell reference fails to disclose or suggest all of the features recited in Claim 16 of the present application. As discussed above with respect to Claim 1, none of the embodiments depicted in the King, Jr. reference disclose or even suggest a surface sealant layer on the bolt shaft, as is expressly recited in Claim 16 of the present application. Furthermore, the Applicants respectfully submit that the Ardell reference fails to supplement the deficiencies in the teachings of the King, Jr. reference. Accordingly, the Applicants respectfully request the withdrawal of the obviousness rejection of Claim 16 and the claims that depend from Claim 16, which is predicated upon the teachings of the King, Jr. reference and the Ardell reference.

Regarding the anticipation rejections based upon the Reynolds, Huck, and Mosc references, the Applicants respectfully request the withdrawal of these rejections. The Applicants note that the subject matter of Claim 17 has been incorporated into Claim 16, thereby rendering these rejections moot.

Newly added Claim 31 is considered allowable for at least the reasons set forth above with respect to Claim 1 from which it depends. Claim 31 advantageously recites a bolt shaft that has a cylindrical shank portion and a smooth tapered portion, where the smooth tapered portion separates the cylindrical shank portion from the locking portion. None of the

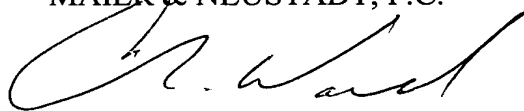
Application Serial No.: 10/690,632
Reply to Office Action dated November 4, 2004

embodiments depicted in the King, Jr. reference disclose a smooth tapered portion separating a cylindrical shank portion from a locking portion, as recited in Claim 31 of the present application. The King, Jr. reference describes embodiments in which a knurled portion is directly adjacent to a shank portion, and thus a locking portion is not separated from a cylindrical shank portion by a smooth tapered portion. The Ardell reference describes a fastening device that includes a shank (1) that is directly adjacent to the annular grooves (3), and thus the Ardell reference also does not disclose a locking portion that is not separated from a cylindrical shank portion by a smooth tapered portion.

Consequently, in view of the above discussion, it is respectfully submitted that the present application is in condition for formal allowance and an early and favorable reconsideration of this application is therefore requested.

Respectfully Submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.



Philippe J.C. Signore, Ph.D.
Registration No. 43,922
Attorney of Record

Christopher D. Ward
Registration No. 41,367

Customer Number

22850

Tel. (703) 413-3000
Fax. (703) 413-2220
(OSMMN 10/01)

PJCS:CDW:brf

I:\atty\cdw\244214US41 CONT\am1.doc